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ANA-U EasyPrinter S3

User Manual



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Version 1.1 – 18.November 2011:

- Internetlink updated

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- Print- and Erasearea added

Version 1.3 – 02.January 2012:

- Errorcodes added

Version 1.4 – 27.March 2012:

- User Interface updated
- Spare parts updated

Liability Statement

This ANA-U product has been built in accordance with the ISO 9001standard. ANA-U GmbH makes no claims regarding this product, its commercial quality or its suitability for any particular task.

Please note and heed the WARNING and CAUTION labels that have been placed on the equipment for your safety. Please do not attempt to operate or repair this equipment without adequate training. Any use, operation or repair in contravention of this document is at your own risk. By acceptance of this system you hereby assume all liability consequent to your use or misuse of this equipment. ANA-U GmbH assumes no liability for incidental, special or consequential damage of any kind. Equipment specifications, applications and options are subject to change at the sole discretion of ANA-U GmbH without notice.

Conformity Regulations

Notice to Users of Printers Equipped with a Contactless Smart Card Coupler

The contactless smart card coupler emits radio-frequency waves and must be used as installed and recommended by ANA-U. You may not modify the coupler or how it is used without the written permission of ANA-U. You may not operate the printer after modifying the coupler or its method of operation.

Trademarks

- Microsoft, Windows, Windows NT are trademarks or registered trademarks of Microsoft Corporation.
- ANA-U is a trademark or registered trademark of ANA-U GmbH, Gleisdorf, Austria.
- All other trademarks are the property of their respective owners.

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General Information

Introduction

The ANA-U EasyPrinter is an industrial printer for ISO plastic cards, with TRW foil coating. It can be adjusted to various kinds of different TRW foils by adjusting the print energy settings.

The industrial metal design is perfect for high end applications and kiosk usage. The 32-bit motherboard allows a perfect and very fast printing.



Picture 1: TRW Card printed with EasyPrinter S3

The ANA-U EasyPrinter is equipped as standard with Serial-, USB and Ethernet- Interfaces.

A printer driver for Microsoft Windows and a .NET Component for the printer communication is available too.

Contents of package

1. 1x EasyPrinter S3
2. 1x Power supply
3. 1x Power cord
4. 1x Serial cable (Crossover cable with RTS and DTS support!)
5. 1x USB cable
6. 1x Ethernet cable
7. 1x Weight for hopper standard (Hopper version only!)



Product Codes

Printers

Ordercode	Productname	Description
330373	EasyPrinter S3	Desktop printer
330374	EasyPrinter S3 H	Desktop printer with Hopper
330375	EasyPrinter S3 OEM	Printing module

Options

Ordercode	Productname	Description
330383	Mifare encoding unit with PC/SC interface	ACS ACR122 Contactless Reader <ul style="list-style-type: none"> • ISO14443 Type A & B • Mifare 1K • Mifare 4K • Mifare Ultralight C • Mifare Plus • DESFire EV1 • 4 types of NFC (ISO/IEC18092) tags • FeliCa
330380	Mifare encoding unit with serial interface	StrongLink SL032 <ul style="list-style-type: none"> • ISO14443A • Ultralight • Mifare Mini • Mifare 1K • Mifare 4K • FM11RF08 • DesFire
330381	Legic Prime and Advant encoding unit	ELATEC TWN3 Legic® NFC 13.56MHz Contactless Reader/Writer <ul style="list-style-type: none"> • Legic Advant • Legic Prime • ISO14443 A+B compatible to part 4 (Mifare DESFire, Mifare Plus, Mifare SmartMX, SLE66, etc.) • ISO15693 (EM4035, Tag-It HFI, SRF55VxxP, my-d, ICODE SLI) • Mifare Classic , Mifare Ultralight • Sony FeliCa • ISO18092/NFC (passive mode) • PayPass, PicoPass (Inside Contactless) • HID iCLASS
330382	125 kHz encoding unit	PROMAG FL20 Multi-Technology Reader <ul style="list-style-type: none"> • 125 kHz EM format (EM4200)
330384	Contact chip encoding unit with PC/SC interface. Chipposition bottom side.	ACS ACR38C Contactchip reader <ul style="list-style-type: none"> • ISO-7816 Class A, B and C • EN 60950/IEC 60950, EMV 2000 Level 1, PC/SC, CCID, CE, FCC, VCCI, RoHS Compliant, USB Full Speed
330385	Magnet unit. Magposition bottom side. 3 tracks read only	3 Track Magnet (read only) <ul style="list-style-type: none"> • ISO-7811 LoCo

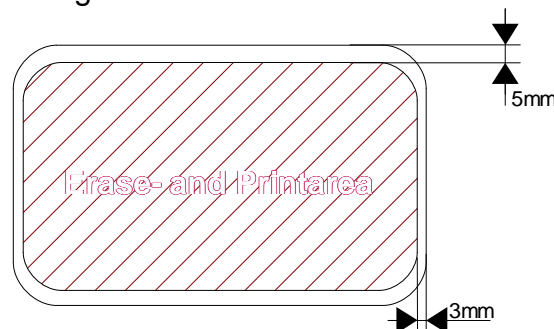
INFO: Other options on request!

Technical specifications

- Industrial design with high end belt transport
- Transport 300 mm/s, printing 150 mm/s, erasing 50-100mm/s
- Graphics and text mode (3 internal fonts)
- Windows driver for printing text and graphics
- Resolution: 300x300 dpi, greyscale dithering
- Serial Interface: 57600 Baud (8 Databits, No Parity, One Stopbit), Hardwarehandshake
- USB interface Rev 2.0
- Ethernet interface (TCP/IP socket connection – Port: 50020)
- Prints cards with thermochromic surface and thermo-direct tickets
- Mifare as standard, any other type possible with changeable adapter
- Built-in Card direction detection
- Desktop variant with or without card hopper
- Erasing with printhead

Erase- and Printarea Limitations

Due to physical characteristics of thermo-rewriteable ISO cards, it is not possible to ensure accurate printing up to the card edges. Therefore the borders for accurate printing are defined as shown in Picture 2.



Picture 2: Erase- and Printarea

Compatible Card Systems

The EasyPrinter S3 is an industrial printer for use with thermo-rewriteable ISO cards. Therefore it is possible to print and erase information onto the cards. Further more cards with contactless chip as well as contact chip can be modified electronically.

Card specifications regarding dimensions, tolerances, quality and construction must be compatible with the relevant ISO standards for chip cards.

The following standards are used to specify the quality of usable cards:

ISO/IEC 7810, ISO/IEC 7811 1 to 5, ISO/IEC 7812, ISO/IEC 7813, ISO/IEC 7816.

INFO: Suitable thermo-rewrite foil for cards and finished qualified cards are available at ANA-U GmbH!

Thickness of Cards:

This device is made to process cards with thickness between 0.3 mm and 0.9 mm.

To ensure the quality of the TRW surface, we also recommend testing and approval of cards by ANA-U with about 50 card samples. Further card productions should be checked against those samples, to ensure the same quality and behaviour.

Rewritable Materials

The following materials are currently compatible:

- Mitsubishi Blue TRW foil
- Mitsubishi Black TRW foil

Environment

You should position your printer on a sturdy, even surface in a well-ventilated room. Room temperature should be moderate, with no abrupt temperature changes or variations in humidity.

Storage and Delivery Conditions

- Storage temperature: 0°C to +50°C
- Relative humidity: 10% to 90% (no condensation)
- *Operative Conditions*
- Temperature: +10°C to +35°C
- Relative humidity: 20% to 80% (no condensation)
- Keep out of direct sunlight
- Keep away from chemicals, liquids, lubricants, dust, etc.

Power Source and Consumption

The printer is connected to power supply via an external power supply.

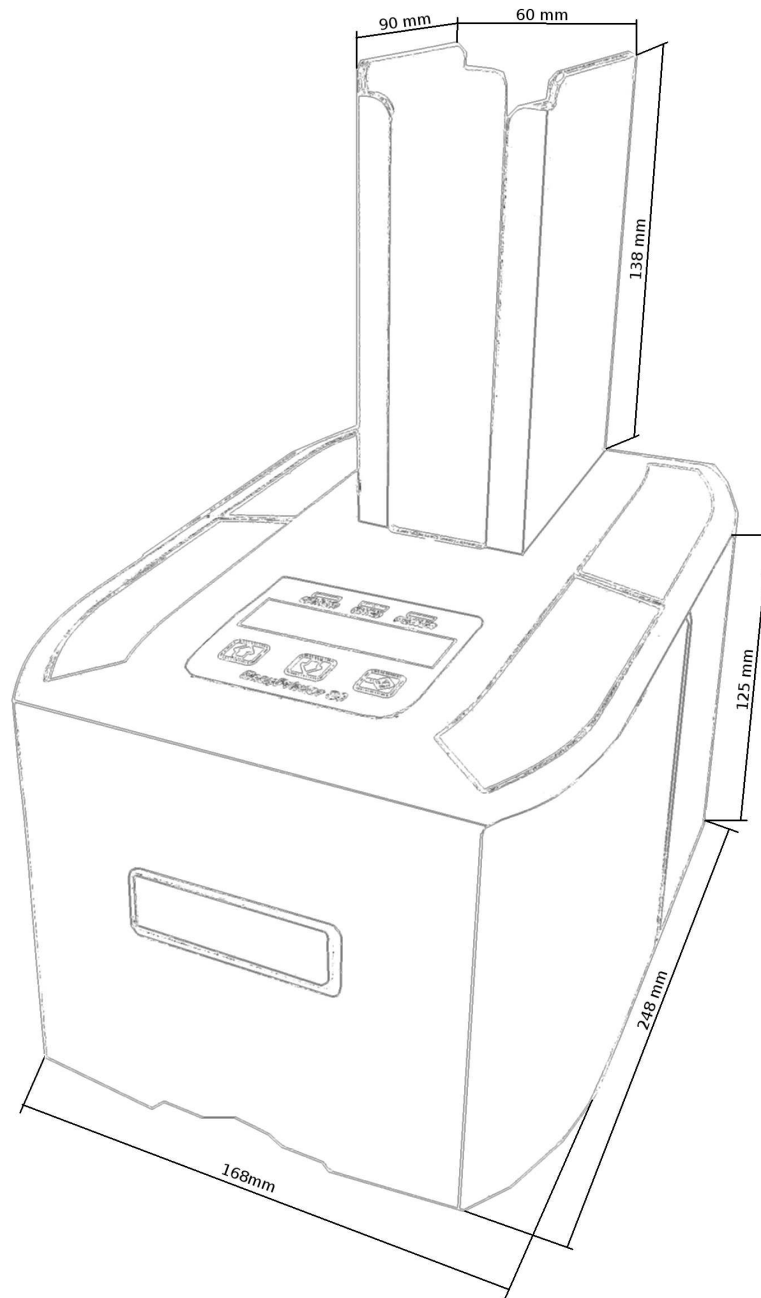
- *Input Voltage Range:* 100-240 VAC
- *Input Current:* 2A RMS max.
- *Frequency:* 50-60Hz

The power supply unit is self adjusting to the appropriate mains voltage. It's compliance can be seen on the picture on the right side.



Picture 3: Power supply compliance

Dimensions



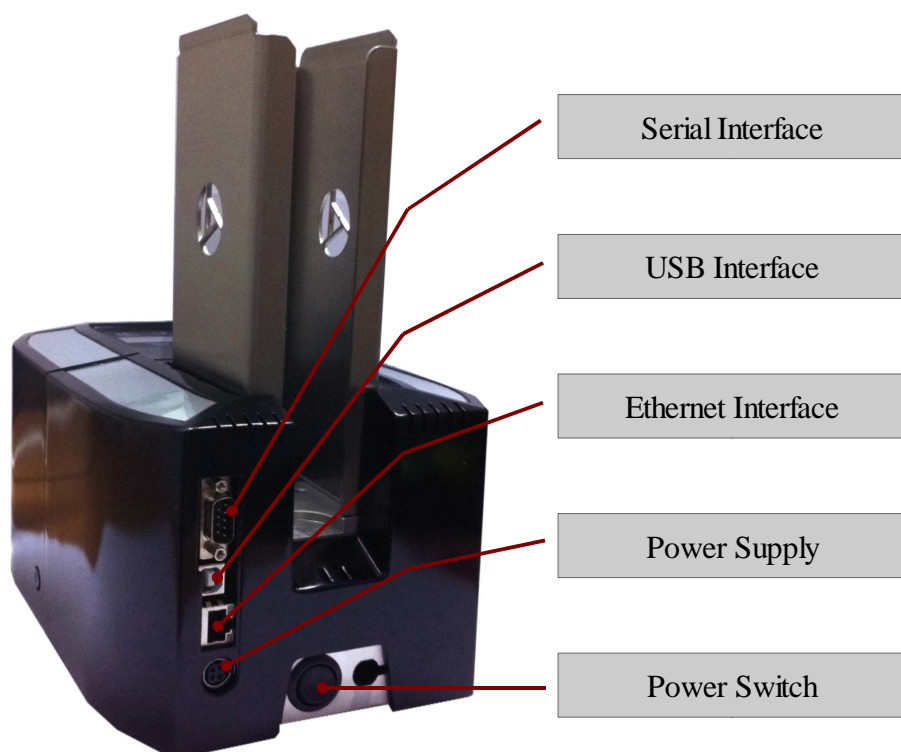
Parameter	Value	Unit
Printer Length	248	mm
Printer Width	168	mm
Printer Height	125	mm
Hopper Length	90	mm
Hopper Width	60	mm
Hopper Height	138	mm
Printer Weight	4600	g

Product Description

Front View



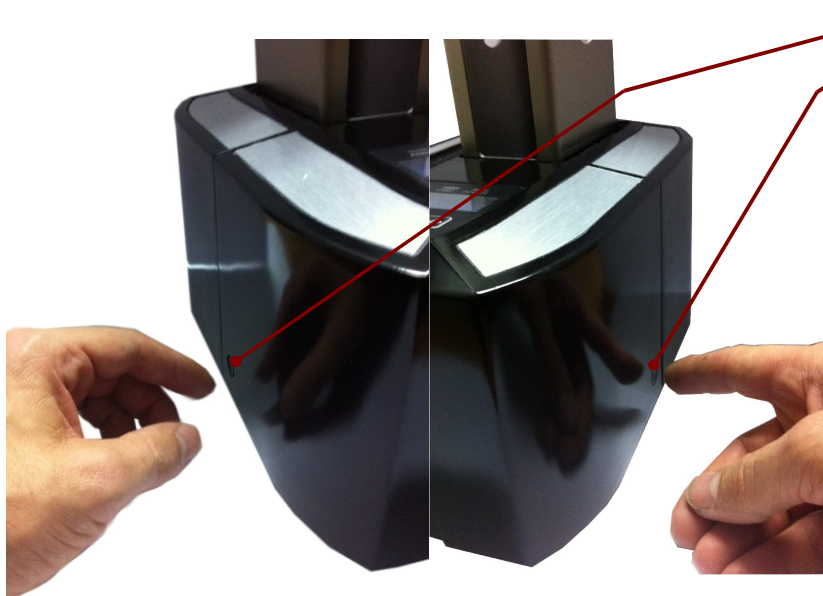
BackView



Open cover

To open the cover, press buttons on both sides of the printer and flip cover.

"OPEN" button



Step 1: Press "OPEN" buttons



Step 2: Flip cover to open

Adjust hopper to card thickness

To ensure optimal card separation, the hopper has to be adjusted to the cards. To proceed, turn the lever to left or right, as shown.



Picture 1: Lever in Left Endposition



Picture 2: Lever in Middle Position

Left Endposition: Max. card thickness (approximatly 0,9mm)

Right Endposition: Min. card thickness (approximatly 0,3mm)

Charging the hopper

1. Insert cards into the hopper as shown in Picture 1.
2. Insert "Hopper Load" on top of the last card. (The hopper load ensures that all cards can be fetched from the hopper)



Picture 1: Insert cards






Picture 2: Insert "Hopper Load"

User Interface




Buttons

The buttons on the display are used to navigate through the menu and change printer settings.

<i>Icon</i>	<i>Action</i>
	"UP"-button.
	"DOWN"-button.
	"SELECT"-button.

LED Notifications

The LEDs indicate the printers working state.

<i>LED</i>	<i>Definition</i>
	LED is on: Printer in error mode. LED is off: Printer in normal mode.
	LED is on: Printer ready to insert card. LED is off: Printer in idle state.
	LED is on: Printer is powered on. LED is off: Printer is not powered on.



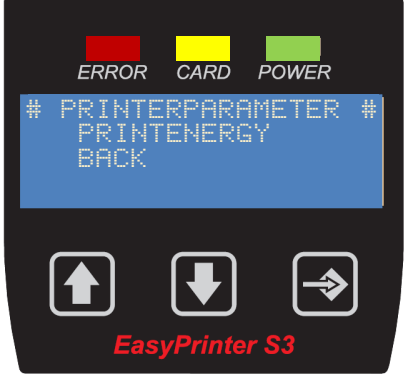
Navigation

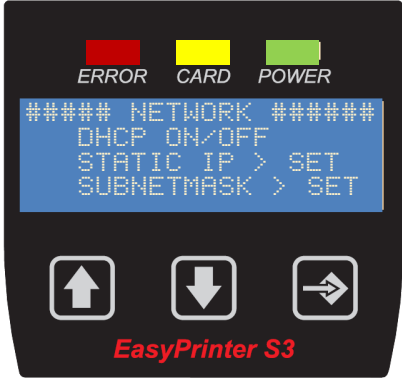

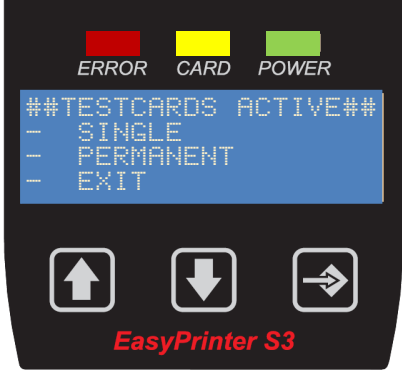

To enter the menu from "Idle State", press the "SELECT"-button.

To select the appropriate menu item, move the ">" sign to the menu item and press the select button.

To change setting, move the ">" sign with the "UP"/"DOWN"-button to the menu item and press the select button. Then use "UP"/"DOWN"-button to change the setting. Finally press "SELECT" to leave the change mode.

Submenus

	<p>Idle State of the Printer</p> <p>The printer is waiting for commands to proceed.</p> <p>To enter the menu, press the "SELECT"-button.</p>
	<p>Main Menu</p> <p>Select a submenu and press the "SELECT"-button.</p> <p>Items:</p> <ul style="list-style-type: none"> • Printparameters • Network • Information • Testcards • Service
	<p>Printerparameters</p> <p>Parameter to adjust printing quality.</p>

 <p>EasyPrinter S3</p>	<p>Network</p> <p>Select if the networkdapter uses DHCP or STATIC IP address.</p> <p>In case of STATIC IP the subnet mask has to be configured too.</p>
 <p>EasyPrinter S3</p>	<p>Info</p> <p>Shows the name of the firmware release loaded to your printer.</p>
 <p>EasyPrinter S3</p>	<p>Testcards</p> <p>Select the testmode and press "SELECT"-button.</p> <p>As long as this menu is active the printer will print testcards without the host system.</p>
 <p>EasyPrinter S3</p>	<p>Service</p> <p>Select the service operation to proceed:</p> <ul style="list-style-type: none"> • Cleaning the printer ("CLEANING") • Printhead Replacement ("PH-REPLACEMENT") <p>For more information see chapter "Maintenance and Service".</p>

Printer Driver Installation

System Requirements

Computer and processor:

500 MHz or faster processor

Memory:

256 MB RAM; 512 MB

Hard disk:

200 MB available disk space

Operating system:

Windows XP (must have SP3) (32-bit), Windows 7, Windows Vista with Service Pack (SP) 1, 32- or 64-bit OS.

Additional Requirements:

.NET Framework 2 with Service Pack (SP) 2 or higher

Installing the printer on a windows system

1. Install the printer driver BEFORE the printer is connected to the PC.

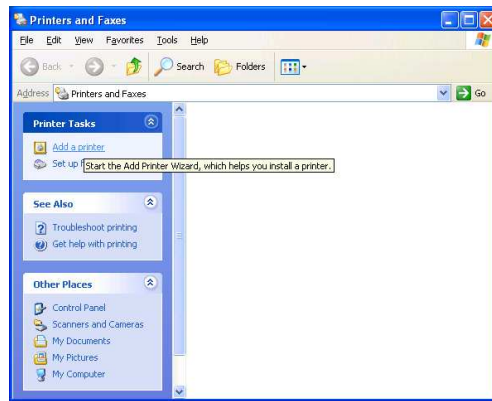
The printer driver can be downloaded from this location:

- <ftp://ana-u.homeserver.com/WinDriverSetup.exe>

2. Connecting the printer to the PC

- Serial and Ethernet: Go on with Pt. 3
- USB: A printer is automatically added when the ANA-U EasyPrinter is connected via USB.

3. Add serial printer to the system first.



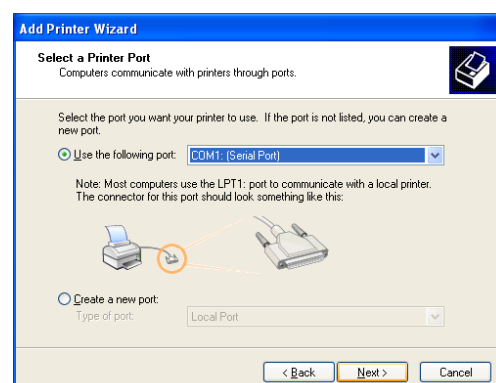
Step 1: At "printer and fax" click on "Add printer"...



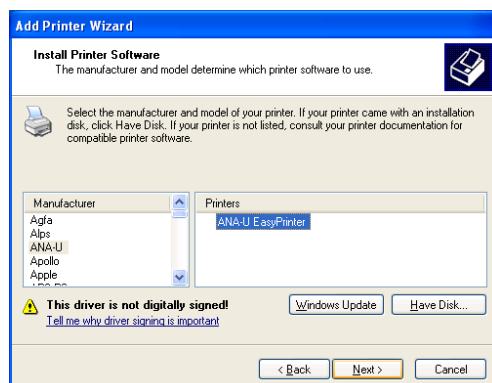
Step 4: Click "Next"...



Step 5: Select "Local printer" and uncheck "Plug and Play" then click "Next"...



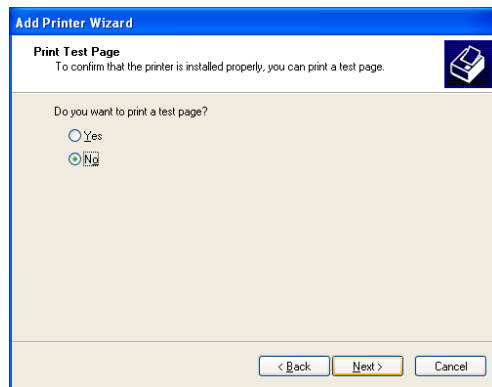
Step 6: Select the printers COM port (for Ethernet select a temporary one) and click "Next"...



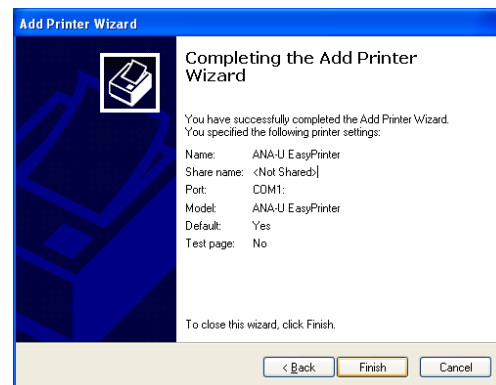
Step 7: Select "ANA-U EasyPrinter" and click "Next"...



Step 8: Name your printer and click "Next"...



Step 9: Select "No" and click "Next"...



Step 10: Click "Finish". Now the printer is ready to use!

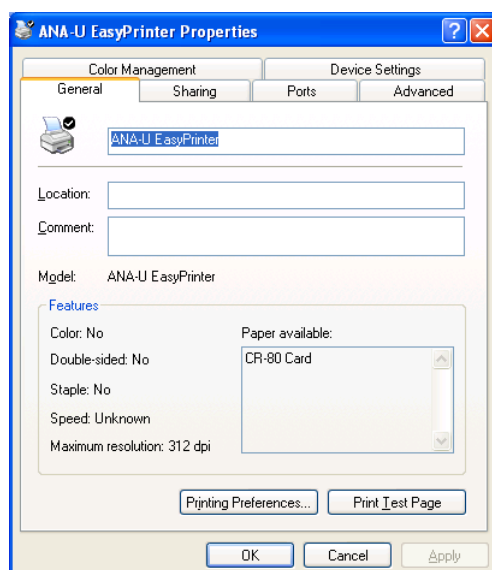


Step 11: Click "Continue Anyway"...

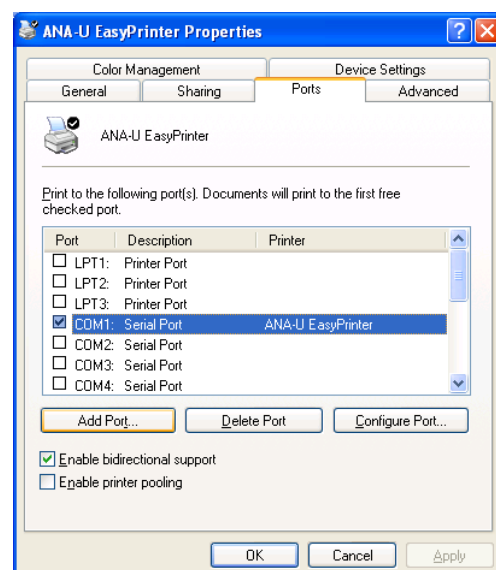
4. Change to Network printer

If a serial printer is already installed, else follow the instructions at Pt. 3 first)

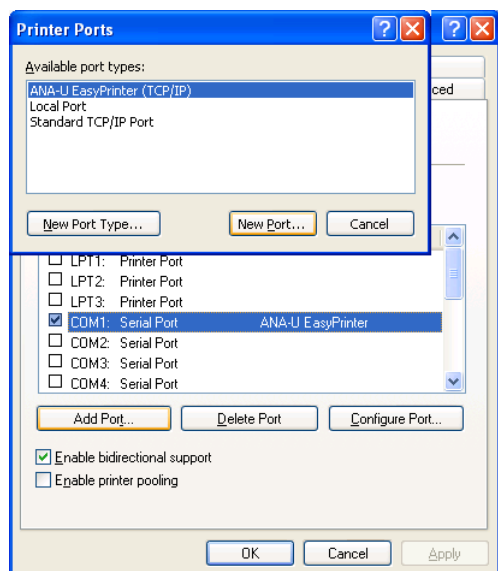
Now change the interface to network, with the following actions:



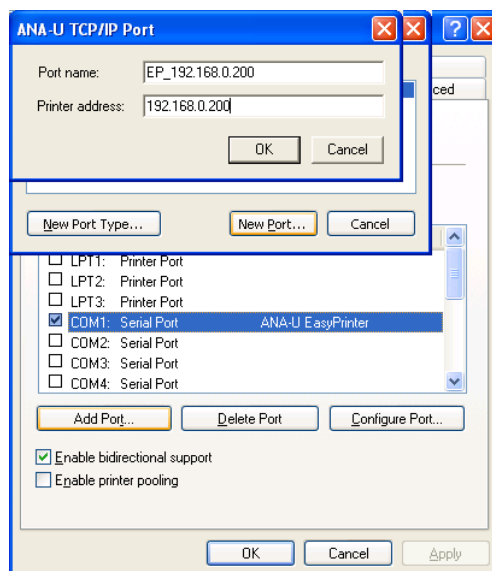
Step 12: At "printer and fax" open "printer properties" from "ANA-U EasyPrinter"...



Step 13: Change to tab "Ports" and click on "Add Port..."



Step 14: Select "ANA-U easyPrinter (TCP/IP)" and click on "New Port..."



Step 15: Enter a name for the port and the IP-address of the printer, then click "OK" and close all other windows.

Now the printer is installed and ready to use!

ANA-U Printer SDK

For easy implementation of the printer into your own program, we provide a software development kit including a .NET EasyPrinter component. It handles all communication to the printer via all supported interfaces.

The ANA-U EasyPrinter Library can be downloaded from:

- <https://ana-u.homeserver.com/EasyPrinter/Software/PC>

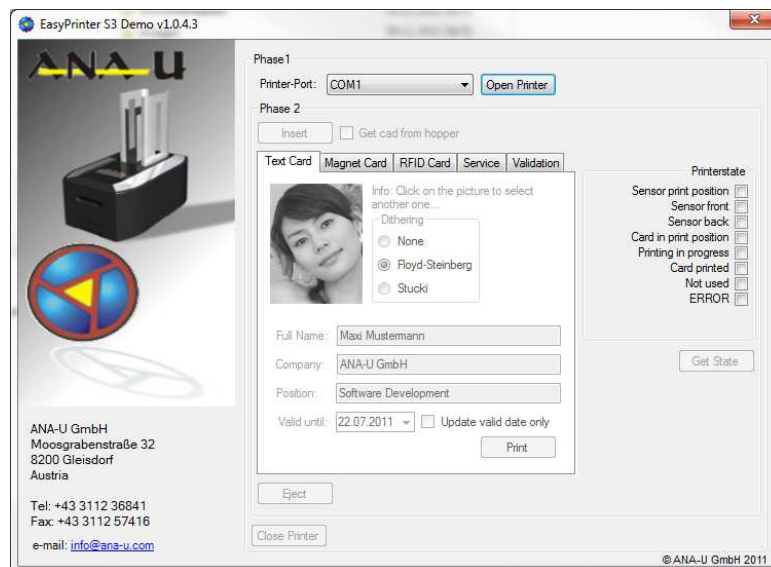
Username: EasyPrinter

Password: EasyPrinter

Installation

1. Download the ANA-U EasyPrinter Library
2. Start the Installation of EasyPrinterLibrarySetup_vx.x.x.x.exe
3. Follow the Wizard to select the Installation location and click "Next".
4. After the installation is done you can run the EasyPrinter S3 Demo program by checking the box "Run".

DemoTool



Picture 1: EasyPrinter S3 Demo

The EasyPrinter S3 Demo shows how to use the ANA-U EasyPrinter Library. It is shipped in C# with a Microsoft Visual Studio 2010 projectfile.

The complete source code and project files of the EasyPrinter S3 Demo are installed on your system. They are located in the folder "DemoSource" on your installation location. (e.g. C:\Program Files (x86)\ANA-U\EasyPrinter Library\DemoSource)

Components

The EasyPrinter component is located directly in the installation location folder.

Filename	Description
EasyPrinter.dll (ana-uapi.dll)	The main component for controlling the printer. (To use this component, also the ana-uapi.dll has to be referenced in the project!)
PCSCMifareReader.dll (SmartCard.dll)	This component is used to exchange data with the printers option <i>RF_Mifare</i> . (To use this component, also the SmartCard.dll has to be referenced in the project!)
.\Documentation\EasyPrinter Component Documentation.chm	Documentation of the EasyPrinter component
.\Documentation\PCSC Mifare Reader Component Documentation.chm	Documentation of the PCSCMifareReader component

Licensing

The ANA-U Printer SDK and all its included Libraries may be used free of charge together with an EasyPrinter S3. It is forbidden to use all or parts of it together with other printers or encoding units.

The Dynamic Library "SmartCard.dll" must be used only in conjunction with PCSCMifareReader.dll and RF-Readers shipped by ANA-U GmbH.

Software support

Additional to the free ANA-U Printer SDK a software support can be purchased. This support includes direct communication to our developers.

INFO: For more information on support contact us!

Contact adress:

ANA-U GmbH
Moosgrabenstraße 32
8200 Gleisdorf, AUSTRIA

E-Mail Support: info@ana-u.com

Website: <http://www.ana-u.com>

Maintenance and Service

Regular maintenance and service can significantly increase the printers lifetime. We recommend to clean the transport belt and rollers after a maximum of 1.000 cards, or at least every 3 months.

Appropriate cleaning materials for the maintenance and service of your printer are available at ANA-U or partners of ANA-U.

WARNING: Using non approved cleaning materials may lead to damage or poor printer functionality.

WARNING: Imminent danger of explosion and fire when using flammable cleaning agents.

Cleaning the printer

The printer contains components which may ignite flammable liquids and vapours. Don't use cleaning agents which are flammable or which can form flammable vapours.



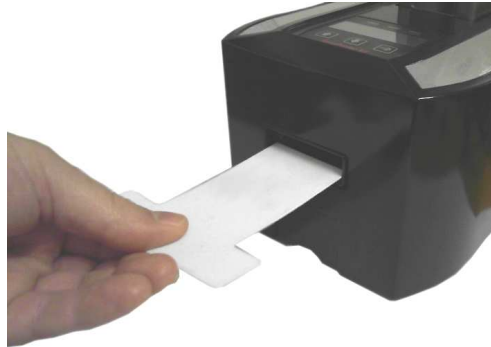
Picture 1: Cleaning set

1. At the printers *User Interface* navigate to "SERVICE>CLEANING" and press "OK".
2. Spray the cleaning fluid to both sides of the cleaning card.



Picture 3: Area to spray to

3. Insert Cleaning card into front card slot.



Picture 4: Insert Cleaning card

4. Printer cleans itself. After the cleaning cycle, the printer ejects the cleaning card.



Picture 5: Cleaning card in cleaning position

5. Now the printer is ready to use again.

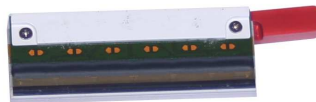
Replacing the printhead

Warning and Safety Notice:

1. Some printer components are very hot. Ensure that you allow enough time to cool down those components after usage.
2. Do not open the printer without first disconnect it completely from the power supply.

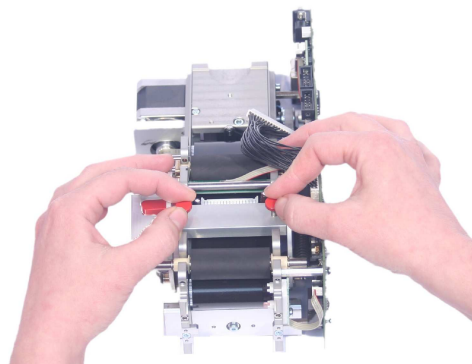
Printheads are sensitive to static electricity. Avoid contact with all electronic components while working with the print head.

Required materials:



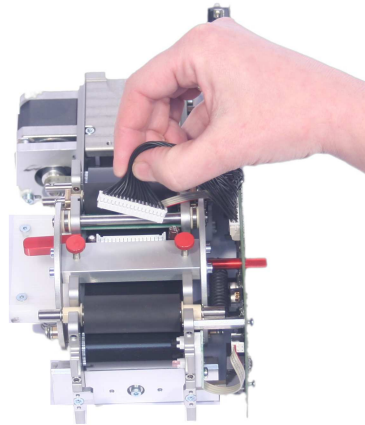
Picture 1: Replacement printhead

1. At the printers *User Interface* navigate to "SERVICE>PH REPLACEMENT" and press "OK".
2. Wait until printers headmovement is done (takes about 1 second).
3. Now the printhead is in replacement position!
4. Wait until printer cooled down after operating.
5. Unplug the power cable from the printer, to avoid electrical damaging.
6. To replace the printhead loosen the 2 shown screws.



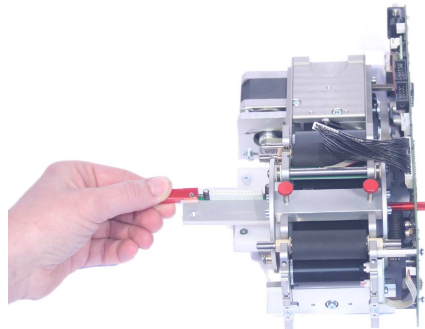
Picture 2: Loosen printhead screws

7. Pull off the printheads cable



Picture 3: Unplug printhead cable

8. Remove the printhead to the left side.



Picture 4: Remove printhead

9. Insert the new printhead.

10. Tighten screws and plug in printheads cable.

11. Plug in power cable. Now the printer is ready to use.

Errorcodes

The printers errorcode is a 4 digit hexadecimal value. It is splitted in 2 value ranges:

- Values between *0x0001* and *0x7FFF* are warnings. The printer will continue working, but the quality of printing may be reduced due to the problem.
- Values higher than *0x7FFF* are fatal errors. If one of this errors occurs, the printer will stop working properly.

Errorcode	Description
0x0000	Printer is working without errors.
0x0001	Printer has to be cleaned using a cleaning card. For details see chapter "Cleaning the printer"!
0x0002	Printers flash parameters are corrupt! The standard values were set to keep the printer working.
0x8001	Card jam! (Card is in printer an can not be moved. Remove blocking card!)
0x8801	Printers RAM test failed! (RAM mightbe electrically damaged)
0x8802	Printheads zero position could not be found! (Check head positioning sensor)

Spare Parts

Contact adress:

ANA-U GmbH
Moosgrabenstraße 32
8200 Gleisdorf, AUSTRIA

E-Mail Support: info@ana-u.com

Website: <http://www.ana-u.com>

Spare part and Support Hotline: +43 3112 368 41

Ordercode	Productname
330376	Print- and Eraseunit 300 dpi, longlife coating
330377	Power supply
330003	Cleaning set EasyPrinter S3 5 reusable cleaning cards 1 cleaning fluid
330379	Weight for hopper standard
330358	Long mouthpiece for S3 OEM
330357	Short mouthpice for S3 OEM
330359	Weight for hopper extra heavy for badly bended cards
330313	Data cable Ethernet
330314	Data cable Serial
330351	Data cable USB
330352	Tool for cover dismounting
330354	Software development kit (SDK) with C# SourcecodeLicense per customer

Imprint

ANA-U GmbH

Moosgrabenstrasse 32

A-8200 Gleisdorf

Austria



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